

Application No. 09/747,521  
Amendment dated December 18, 2003  
Reply to Office action of May 7, 2003  
Docket Number 22727/04079

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the above-identified application:

**Listing of Claims:**

1. - 23. (cancelled)

~~24.~~ (currently amended) The An nucleic-acid-based immunogenic composition of claim 23, comprising

(a) a first polynucleotide which encodes a mutated *B. anthracis* lethal factor (LF) protein, or a fragment thereof that contains amino acids 42 to 285 of SEQ ID NO:2, said first polynucleotide being operably linked to a promoter which drives expression of said LF protein or fragment thereof in cells of a mammalian subject, and;

(b) wherein the nucleic acid-based composition further comprises a DNA plasmid which comprises a second polynucleotide which encodes a full-length, mature *B. anthracis* protective antigen (PA) protein, or an immunogenic fragment thereof that contains amino acids 204 to 764 of SEQ ID NO:4, to the subject, wherein said second polynucleotide which encodes a full-length mature *B. anthracis* PA-protein or an immunogenic fragment thereof is being operably linked to a promoter which drives expression of the full-length, mature said PA protein or the immunogenic-fragment thereof in cells of the a mammalian subject,

wherein said LF protein or fragment thereof lacks metalloproteinase activity full-length mature *B. anthracis* PA-protein comprises amino acid 30 through amino acid 764 of SEQ ID NO: 4, and wherein said immunogenic fragment of the *B. anthracis* PA protein comprises amino acid 204 through amino acid 764 of SEQ ID NO: 4.

~~25.~~ (cancelled)

~~26.~~ (currently amended) The immunogenic composition of claim ~~24~~ wherein the LF said first and second polynucleotides and the PA polynucleotide are on separate DNA polynucleotide constructs.

~~27.~~ (currently amended) The immunogenic composition of claim ~~24~~ wherein the LF said first and second polynucleotides and the PA polynucleotide are on the same DNA polynucleotide

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construct.

28. - 30. (cancelled)

4 31. (currently amended) The ~~nucleic acid-based~~ immunogenic composition of claim ~~23~~ <sup>1</sup>/<sub>24</sub> wherein the said first polynucleotide encodes a ~~polypeptide comprising~~ sequentially amino acids 34 through ~~amino acid~~ 719 of the ~~amino acid sequence set forth in~~ SEQ ID NO. 2, an amino acid other than glutamic acid, and amino acids 721 through ~~amino acid~~ 809 of the ~~sequence set forth in~~ SEQ ID NO. 2.

32. - 40. (cancelled)

5 41. (currently amended) The ~~nucleic acid-based~~ immunogenic composition of claim ~~23~~ <sup>1</sup>/<sub>24</sub> wherein the each of said first and said second polynucleotides is incorporated into a mammalian expression vector.

G1 6 42. (currently amended) The ~~nucleic acid-based~~ immunogenic composition of claim ~~24~~ <sup>1</sup> wherein the said first and said second polynucleotides ~~that encodes the full-length, mature mutated LF protein or immunogenic fragment thereof and the polynucleotide that encodes the full-length, mature PA protein or immunogenic fragment thereof~~ are incorporated into the same or separate mammalian expression vectors.

43. - 44. (cancelled)

7 45. (currently amended) The ~~nucleic acid-based~~ immunogenic composition of claim ~~41~~ <sup>5</sup> wherein the mammalian expression vector is a viral expression vector.

8 46. (currently amended) The ~~nucleic acid-based~~ immunogenic composition of claim ~~41~~ <sup>5</sup> wherein the ~~eukaryotic~~ mammalian expression vector is a eukaryotic expression plasmid.

9 47. (currently amended) The ~~nucleic acid-based~~ immunogenic composition of claim ~~42~~ <sup>6</sup> wherein the said first and said second polynucleotides ~~that encodes the full-length, mature, mutated LF protein and the polynucleotide that encodes the full-length mature PA protein~~ are incorporated into the same or different viral expression vectors.

10 48. (currently amended) The ~~nucleic acid-based~~ immunogenic composition of claim ~~42~~ <sup>6</sup> wherein the said first and said second polynucleotides ~~that encodes the full-length, mature, mutated LF protein and the polynucleotide that encodes the full-length mature, mutated PA~~

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protein are incorporated into the same or different eukaryotic expression plasmids.

11 49. (currently amended) The ~~nucleic acid based~~ immunogenic composition of claim 23 ~~24~~ wherein the each of said first polynucleotide and said second polynucleotide that encodes the full length mature, mutated LF protein or an immunogenic fragment of the LF protein is a DNA molecule that does not become integrated into the genome of the mammalian subject's cells.

G 12 50. (currently amended) The nucleic acid based composition of claim 23 ~~24~~ wherein the each of said first and said second polynucleotides that encodes the mature, mutated LF protein or an immunogenic fragment of the LF protein is an RNA molecule.

51. - 52. (cancelled)

13 53. (currently amended) The ~~method~~ immunogenic composition of claim 51 ~~24~~ wherein each of said isolated nucleic acid and said promoter first and said second polynucleotides comprise is incorporated into a construct selected from the group consisting of a linearized DNA, linearized RNA, a DNA plasmid, a viral vector, and a bacterial vector.

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